Approved for use through 03/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Under the Reservork Reduction Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT

of

4

(Use as many sheets as necessary)

Sheet

1

| Co                     | emplete if Known            |
|------------------------|-----------------------------|
| Application Number     | 10/562,410                  |
| Filing Date            | December 23, 2005           |
| First Named Inventor   | Calvin B. Harley            |
| Art Unit               | 1611                        |
| Confirmation No.       | 6086                        |
| Examiner Name          | LANDAU, Sharmilla Gollamudi |
| Attorney Docket Number | 38797-8007.US00 (511/002)   |

|   |             |                                     | U.S. PATENT DO              | CUMENTS  |   |
|---|-------------|-------------------------------------|-----------------------------|--|---|
| Examiner Initials                       | Cite<br>No. | Document Number<br>Number-Kind-Code | Publication Date MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines,<br>where relevant passages or<br>relevant figures appear |
| /TL/                                    | 1.          | US-2002/0182272 A1                  | 12-05-2002                  | Halstead   |   |
| *************************************** | 2.          | US-2007/0122501 A1                  | 05-31-2007                  | Harley et al.                                      |   |
|   | 3.          | US-2008/0113925 A1                  | 05-15-2008                  | Harley et al.                                      |   |
|   | 4.          | US-5,629,154                        | 05-13-1997                  | Kim et al.   |   |
|   | 5.          | US-5,785,977                        | 07-28-1998                  | Breitbarth   |   |
|   | 6.          | US-5,916,565                        | 06-29-1999                  | Rose et al.  |   |
|   | 7.          | US-6,007,989                        | 12-28-1999                  | West et al.  |   |
|   | 8.          | US-6,126,942                        | 10-03-2000                  | Yang   | -   |
| 00000000                                | 9.          | US-6,153,208                        | 11-28-2000                  | McAtee et al.                                      |   |
| V                                       | 10.         | US-6,277,396 B1                     | 08-21-2001                  | Dente  |   |
| /TL/                                    | 11.         | US-6,855,344 B2                     | 02-15-2005                  | Chou   |   |

|   | -           | FOI   | REIGN PATEN                       | IT DOCUMENTS  |  |     |
|---|-------------|---|-----------------------------------|---|--|-----|
| Examiner<br>Initials                    | Cite<br>No. | Foreign Patent Document Country Code-Number-Kind-Code | Publication<br>Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document  | Pages, Columns, Lines,<br>where relevant<br>passages or relevant<br>figures appear | T   |
| /TL/                                    | 12.         | CN 1079265 C  | 02-20-2002                        | Pei<br>(Abstract Only)                              | ABS ONLY   | Abs |
| 000000000000000000000000000000000000000 | 13.         | CN 1383853 A  | 12-11-2002                        | Zheng<br>(English Abstract)                         | ABS ONLY   | Abs |
|   | 14.         | JP 62-012791  | 01-21-1987                        | Osaka Yakuhin Kenkyusho<br>KK<br>(English Abstract) | ABS ONLY   | Abs |
| 00000000                                | 15.         | WO 00/08135 A1  | 02-17-2000                        | Board of Regents, The<br>University of Texas System |  |     |
|   | 16.         | WO 00/31238 A2  | 06-02-2000                        | Genetica, Inc.                                      |  |     |
| V                                       | 17.         | WO 01/01996 A1  | 01-11-2001                        | University of Western<br>Australia                  |  |     |
| /TĽ/                                    | 18.         | WO 05/044179 A2                                       | 05-19-2005                        | Hong Kong University of Science and Technology      |  |     |

|                   |             | NON PATENT LITERATURE DOCUMENTS   |       |
|-------------------|-------------|---|-------|
| Examiner Initials | Cite<br>No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | Trans |
| /TL/              | 19.         | "Astragalus" www.drugs.com/npp/astragalus.html, 5 pages (Oct. 20, 2008).  |       |

| Examiner  | /T/           | Date       | 07/28/2009 |
|-----------|---------------|------------|------------|
| Signature | /Trevor Love/ | Considered | 07/20/2003 |

| Substitute for fo | rm 1449/PTO                             | ······································ |   | Co                     | omplete if Known            |
|-------------------|---|--|---|------------------------|-----------------------------|
|                   |   |  |   | Application Number     | 10/562,410                  |
| INEOBN            | AATION I                                | DISCLOS                                |   | Filing Date            | December 23, 2005           |
|                   |   |  |   | First Named Inventor   | Calvin B. Harley            |
| SIAIL             | airmi ba                                | /applic/                               |   | Art Unit               | 1611                        |
| (lise as many     | sheets as necessa                       | arv)                                   |   | Confirmation No.       | 6086                        |
| ,000 00           | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | 37                                     |   | Examiner Name          | LANDAU, Sharmilla Gollamudi |
| Sheet             | 2                                       | of                                     | 4 | Attorney Docket Number | 38797-8007.US00 (511/002)   |

|   |             | NON PATENT LITERATURE DOCUMENTS   |             |
|---|-------------|---|-------------|
| Examiner<br>Initials                    | Cite<br>No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.   | Trans       |
| /ŢL/                                    | 20.         | BEDIR, E. et al., "Cycloartane triterpene glycosides from the roots of <i>Astragalus brachypterus</i> and <i>Astragalus microcephalus</i> ," <i>J. Nat. Prod.</i> , <u>61</u> :1469-72 (1998).  |             |
|   | 21.         | BEDIR, E. et al., "Immunostimulatory effects of cycloartane-type triterpene glycosides from Astragalus species", <i>Biol. Pharm. Bull.</i> , <u>23</u> (7):834-837 (2000).  |             |
|   | 22.         | BODNAR, A. G. et al., "Extension of life-span by introduction of telomerase into normal human cells" <i>Science</i> , 279(5349):349-52 (1998).  |             |
| 000000000000000000000000000000000000000 | 23.         | CALZADA, L. et al., "Effect of tetracyclic triterpenes (argentatins A, B and D) on the estradiol receptor of hormone-dependent tumors of human breast", <i>Medical Science Research</i> , 23(12):815-16 (1995).   | •           |
| 00000                                   | 24.         | CHIU, C. P. et al., "Replicative senescence and cell immortality: the role of telomeres and telomerase", <i>Proc. Soc. Exp. Biol. Med.</i> , <u>214</u> (2):99-106 (Feb 1997).  |             |
| 000000000000000000000000000000000000000 | 25.         | CHU, D-T. et al., "Fractionated extract of <i>Astragalus membranaceus</i> , a Chinese medicinal herb, potentiates lak cell cytotoxicity generated by a low dose of recombinant interleukin-2;" <i>J. Clin. Lab. Immunol.</i> , 26:183-7 (1988).   |             |
| 000000000000000000000000000000000000000 | 26.         | CHU, D-T. et al., "Immunotherapy with Chinese medicinal herbs. II Reversal of cyclophosphamide-induced immune suppression by administration of fractionated Astragalus membranaceus in vivo," <i>J. Clin. Lab. Immunol.</i> , <u>25</u> :125-9 (1988).  |             |
|   | 27.         | DAGARAG, M. et al., "Differential impairment of lytic and cytokine functions in senescent human immunodeficiency virus type 1-specific cytotox T lymphocytes", <i>Journal of Virology</i> , 77(5):3077-83 (2003).   |             |
|   | 28.         | FARWELL, D. G. et al., "Genetic and epigenetic changes in human epithelial cells immortalized by telomerase", <i>American Journal of Pathology</i> , 156(5):1537-47 (2000).   |             |
|   | 29.         | FUJIMOTO, R. et al., "Expression of telomerase components in oral keratinocytes and squamous cell carcinomas", <i>Oral Oncology</i> , <u>37(2)</u> :132-40 (2001).  |             |
|   | 30.         | HARLEY, C. B. et al., "Telomeres shorten during ageing of human fibroblasts", <i>Nature</i> , 345(6274):458-60 (1990).  |             |
| 1,                                      | 31.         | HENDERSON, S. et al., "In situ analysis of changes in telomere size during replicative aging and cell transformation", Journal of Cell Biology, <u>134</u> (1):1-12 (1996).   |             |
| /TL/                                    | 32.         | IONKOVA, I., "Astragalus species (Milk Vetch): in Vitro culture and the production of saponins, astragaline, and other biologically active compounds," Biotechnology in Agriculture and Forestry, Vol. 33, Medicinal and Aromatic Plants VIII, Y. Bajaj, Ed., Springer Verlag, Berlin, pp. 97-138 (1995). |             |
|   | 33.         | JUNTAO, L. et al., "Effect of retinoic acid and genseng on the telomerase activity in the liver cancer cell," J. Trop. Med. 2(1):39-40 (2002). Cited Twide  | e           |
| /TL/                                    | 34.         | KANEKO, M. et al., "Accelerated recovery from cyclophosphamide-induced leukopenia in mice administered a Japanese ethical herbal drug, <i>Hochu-ekki-to", Immunopharmacology</i> , 44(3):223-231 (1999).  | *********** |
|   | 35.         | KANG, M. K. et al., "Replicative senescence of normal human oral keratinocytes is associated with the loss of telomerase activity without shortening of telomeres", <i>Cell Growth &amp; Differentiation</i> , 9(1):85-95 (1998).   |             |
| /TL/                                    | 36.         | KHUSHBAKTOVA, Z. A. et al., "Influence of cycloartanes from plants of the genus Astragalus and their synthetic analogs on the contractive function of the rnyocarbium and the activity of Na, K-ATPase", Chemistry of Natural Compounds, 30(4):469-473 (1994).  |             |

| Examiner /Trevor Love/ Date 07/28/2009 |          |               |            |            |  |
|--|----------|---------------|------------|------------|--|
| 1 - 1 (DEVOLOME)                       | Examiner | /Trayar Laya/ | Date       | 07/28/2000 |  |
| Signature Considered Considered        |          | / Hevoi Love/ | Considered | 01/20/2008 |  |

5586317\_1

| Substitute for for | m 1449/PTO                              |         |      | Co                     | mplete if Known             |
|--------------------|---|---------|------|------------------------|-----------------------------|
|                    |   |         |      | Application Number     | 10/562,410                  |
| INFORM             | MATION F                                | DISCLOS | LIRE | Filing Date            | December 23, 2005           |
|                    | •• • • • • • •                          |         | _    | First Named Inventor   | Calvin B. Harley            |
| SIAIE              | MENIBY                                  | APPLIC  | ANI  | Art Unit               | 1611                        |
| (lise as many s    | heets as necessa                        | irv)    |      | Confirmation No.       | 6086                        |
| (000 00            | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |         |      | Examiner Name          | LANDAU, Sharmilla Gollamudi |
| Sheet              | 3                                       | of      | 4    | Attorney Docket Number | 38797-8007.US00 (511/002)   |

|   |                | NON PATENT LITERATURE DOCUMENTS  | ·····                                   | ]   |
|---|----------------|--|---|-----|
|   |                | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate),  |   | 1   |
| Examiner<br>Initials                    | Cite<br>No.    | title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.  | Trans                                   |     |
| /TL/                                    | 37.            | KINJO, J. et al., "Anti-herpes virus activity of fabaceous triterpenoidal saponins", <i>Biological &amp; Pharmaceutical Bulletin</i> 23(7):887-9 (2000).   |   |     |
| 000000000000000000000000000000000000000 | 38.            | LEE, K. M. et al., "Immortalization with telomerase of the Nestin-positive cells of the human pancreas", <i>Biochem Biophys Res Commun</i> , 301(4):1038-44 (2003).  |   |     |
|   | 39.            | JUNTAO, L. et al., "Effect of retinoic acid and genseng on the telomerase activity in the liver cancer cell," <i>J. Trop. Med.</i> , 2(1):39-40 (2002) (English Abstract).   | √ ABS                                   | ONI |
|   | 40.            | MATTSON, M. P., "Emerging neuroprotective strategies for Alzheimer's disease: dietary restriction, telomerase activation, and stem cell therapy", <i>Experimental Gerontology</i> , 35(4):489-502 (2000).  |   |     |
|   | 41.            | MORALES, C. P. et al., "Absence of cancer-associated changes in human fibroblasts immortalized with telomerase", <i>Nature Genetics</i> , 21(1):115-8 (1999).  |   |     |
|   | 42.            | ODA, K. et al., "Adjuvant and haemolytic activities of 47 saponins derived from medicinal and food plants", <i>Biological Chemistry</i> , 381(1):67-74 (2000).   |   |     |
| 000000000000000000000000000000000000000 | 43.            | OH, H. and Schneider, M. D. ,"The emerging role of telomerase in cardiac muscle cell growth and survival", <i>Journal of Molecular Cellular Cardiology</i> , 34(7):717-24 (2002).  |   |     |
| 000000000000000000000000000000000000000 | 44.            | SIMONSEN, J. L. et al., "Telomerase expression extends the proliferative life-span and maintains the osteogenic potential of human bone marrow stromal cells", <i>Nature Biotechnology</i> , 20(6):592-6 (2002).   |   |     |
| 000000000000000000000000000000000000000 | 45.            | THOMAS, M., Yang, L., and Hornsby, P. J., "Formation of functional tissue from transplanted adrenocortical cells expressing telomerase reverse transcriptase", <i>Nature Biotechnology</i> , 18(1):39-42 (2000).   |   | :   |
|   | 46.            | VASA, M. et al., "Nitric oxide activates telomerase and delays endothelial cell senescence",<br>Circulation Research, 87(7):540-542 (2000).  |   |     |
|   | 47.            | WANG, Y-P. et al., "Effect of astragaloside IV on T, B lymphocyte proliferation and peritoneal macrophage function in mice", <i>Acta Pharmacologica Sinica</i> , 23(3): 263-6 (2002).  |   |     |
|   | 48.            | XIAO, H. et al., "Total analytical method for Radix astragali extract using two-binary multi-<br>segment gradient elution liquid chromatography," <i>J. Sep. Sci.</i> , <u>24</u> :186-96 (2001).  |   |     |
|   | 49.            | YANG, J. et al., "Telomerized human microvasculature is functional in vivo", <i>Nature Biotechnology</i> , 19(3):219-24 (2001).  |   |     |
|   | 50.            | YANG, J., et al., "Human endothelial cell life extension by telomerase expression", <i>The Journal of Biological Chemistry</i> , <u>274</u> (37):26141-26148 (1999).   |   |     |
|   | 51.            | YUDOH, K. et al., "Reconstituting telomerase activity using the telomerase catalytic subunit prevents the telomere shorting and replicative senescence in human osteoblasts", <i>Journal of Bone and Mineral Research</i> , 16(8):1453-1464 (2001).  |   |     |
| /TL/                                    | 52.            | ZHANG W. J. et al., "Regulation of the fibrinolytic potential of cultured human umbilical vein endothelial cells: astragaloside IV downregulates plasminogen activator inhibitor-1 and upregulates tissue-type plasminogen activator expression", <i>Journal of Vascular Research</i> , 34(4):273-80 (1997). |   |     |
| *************************************** | <del>-53</del> | ZHAO, K. et al., "Enhancement of the immune response in mice by Astragatus Copy not  | reciev                                  | ed  |
| /TL/                                    | 54.            | membranescue extracts," Immunopharmacology, 20:225-34 (1990)  ZHENG, Z. et al., "Studies on chemical constituents and immunological function activity of hairy root of Astragalus membranaceus," Chinese Journal of Biotechnology, 14(2):L93-7 (1998).   | 000000000000000000000000000000000000000 |     |

| Signature Considered 07/28/2009 | Examiner /Trevor Love/ | Date<br>Considered 0 | 7/28/2009 |
|---------------------------------|------------------------|----------------------|-----------|
|---------------------------------|------------------------|----------------------|-----------|

5586317\_1

Substitute for form 1449/PTO Complete if Known **Application Number** 10/562,410 December 23, 2005 Filing Date INFORMATION DISCLOSURE First Named Inventor Calvin B. Harley STATEMENT BY APPLICANT Art Unit 1611 Confirmation No. 6086 (Use as many sheets as necessary) **Examiner Name** LANDAU, Sharmilla Gollamudi Attorney Docket Number 38797-8007.US00 (511/002) 4 4 of Sheet

|                      |             | NON PATENT LITERATURE DOCUMENTS   |       |
|----------------------|-------------|---|-------|
| Examiner<br>Initials | Cite<br>No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | Trans |
| /TL/                 | 55.         | ZI-PU, L. and Qian, C., "Effects of astragaloside IV on myocardial calcium transport and cardiac function in ischemic rats", <i>Acta Pharmacol Sin</i> 23(10):898-904 (2002).   |       |

| Examiner Signature /Trevor Love/ | Date<br>Considered | 07/28/2009 |  |
|----------------------------------|--------------------|------------|--|
|----------------------------------|--------------------|------------|--|